1. Find a simplest proposition that is logically equivalent to \((p \rightarrow q) \rightarrow (q \rightarrow p)\).

2. Show whether \(p\) logically implies \(p \rightarrow p\) or not.

3. Simplify \(\exists x \neg P(x) \rightarrow \forall x P(x)\) so that only one quantifier remains.

4. Find a logic expression that is equivalent to \(A \times B = B \times A\) without using the \(\times\) operator.

5. Prove that the power set of a finite set is never equal to itself.